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09/935,407	08/23/2001	Hiroo Hayashi	2309/01726	9841

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EXAMINER

VANATTA, AMY B

ART UNIT

PAPER NUMBER

3765

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DATE MAILED: 09/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/935,407

Applicant(s)

HAYASHI ET AL.

Examiner

Amy B. Vanatta

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In the claims, the term "tow" is typed all in capital letters, appearing throughout the claims as "TOW". It is unclear why it appears in this manner, and such an appearance is confusing since the significance of the capital letters is unclear (it implies that the term has a significance such as a trademark, an abbreviation, etc.). The claims should be amended to recite "tow" in standard lowercase letters.

Claim 1 recites "An opening method of continuous filaments". Such language is confusing. It appears that this should instead read in a manner such as "A method of opening continuous filaments" or "An opening method for continuous filaments", or the like.

In claim 1, line 7, the recitation "at between rolls" is confusing and grammatically incorrect. The position of the sliding body should be more clearly claimed, such as "between said rolls" or "at a position (or location) between said rolls", or the like.

Regarding claim 1, line 8, it is unclear how tow would be able to "sift". Thus, it appears that this term should instead read as "shift".

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In claim 3, line 3, "the" should appear before "transporting path".

In claim 5, line 3, "an" and "a" should appear before "upstream" and "downstream", respectively, so as to more clearly recite the invention. Similarly, in claim 6, lines 2-3, "an" and "a" should appear before "upstream" and "downstream", and in lines 4-5, "the" should appear before "upstream" and "downstream". In claim 10 and claim 11, lines 2-3, "an" and "a" should appear before "upstream" and "downstream". In claim 11, lines 4-5, "the" should appear before "upstream" and "downstream".

Claim 7 recites "An opening apparatus of continuous filaments". Such language is confusing. It appears that this should instead read in a manner such as "An apparatus for opening continuous filaments" or "An opening apparatus for continuous filaments", or the like.

In claim 9, line 7, "the" should appear before "transporting path".

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 7 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Pryor (4,509,452).

Pryor discloses an apparatus including a transporting roll group (27,28; 34,35) for transporting tow and at least one sliding body (30,31 in Fig. 4 or those embodiments

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shown in Figs. 1-3) arranged between rolls of the transporting roll group for slidably contacting the tow to be transported. Sliding body 30 is provided on one side of the tow and sliding body 31 is provided on the other side of the tow as in claim 8. Although Pryor does teach that the tow is continuous filaments, the tow is not disclosed as crimped. Such a recitation in claim 7 of the transporting roll group being "for transporting crimped tow" amounts to the intended use of the apparatus, however, and it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987).

5. Claims 7 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by McLellan (2,801,455).

McLellan discloses an apparatus including a transporting roll group (25,27,33) for transporting yarns and at least one sliding body (52,56 in Fig. 2 or 61,62 in Fig. 3) arranged between rolls of the transporting roll group for slidably contacting the yarn to be transported. McLellan teaches that the drawing rate of rollers 33 is correlated to the rate of rollers 27, thus being driven to rotate at the same speed as in claim 10 (col. 3, lines 8-10). Although McLellan does not disclose that the yarn being treated is crimped tow of continuous filaments, such a recitation in claim 7 of the transporting roll group being "for transporting crimped tow of continuous filaments" amounts to the intended use of the apparatus, however, and it has been held that a recitation with respect to the

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manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. Ex parte Masham, 2 USPQ2d 1647 (1987).

6. Claims 7 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Stuart (5,000,807).

Stuart discloses an apparatus including a transporting roll group (28,43,49) for transporting yarn and at least one sliding body (30,42) arranged between rolls of the transporting roll group for slidably contacting the yarn to be transported. Sliding body 30 is provided on one side of the yarn filaments and sliding body 42 is provided on the other side of the yarn filaments as in claim 8. Although Stuart does not teach that the yarn filaments being treated is crimped tow, such a recitation in claim 7 of the transporting roll group being "for transporting crimped tow of continuous filaments" amounts to the intended use of the apparatus, however, and it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. Ex parte Masham, 2 USPQ2d 1647 (1987).

7. Claims 1 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Stoller (3,438,104).

Stoller discloses a method including a step of transporting crimped filaments, which forms "tow" to the extent claimed. The crimped filaments are transported by

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means of a plurality of rolls (3,3; 7,7). Stoller discloses a step of applying a resistance on at least one side of the filaments by slidably contacting at least one sliding body (4) onto the filaments between the rolls. The filaments are caused to "sift" or shift in a transporting direction and to spread in a width direction as claimed (col. 3, lines 24-32).

Regarding claim 7, Stoller discloses an apparatus including a transporting roll group (3,3; 7,7 for transporting crimped filaments which form "tow" to the extent claimed. The apparatus includes at least one sliding body (4) arranged between rolls of the transporting roll group for slidably contacting the filaments to be transported.

8. Claims 1, 2, 6, 7, 8, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Smith (2,790,208).

Smith discloses a method including a step of transporting crimped tow by means of a plurality of rolls (11,12,13,14). Smith discloses a step of applying a resistance on at least one side of the tow by slidably contacting at least one sliding body (19,20,21) onto the tow between the rolls. The tow is caused to "sift" or shift in a transporting direction to open the tow and to spread in a width direction as claimed. A plurality of sliding bodies are provided (19,20,21) as in claim 2, and each side of the tow is slidably contacted by at least one of the sliding bodies (see Fig. 1).

Regarding claim 7, Smith discloses an apparatus including a transporting roll group (11, 12, 13, 14) for transporting tow and at least one sliding body (19,20,21) arranged between rolls of the transporting roll group for slidably contacting the tow to

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be transported. Sliding body 19 is provided on one side of the tow and sliding bodies 20,21 are provided on the other side of the tow as in claim 8.

Regarding claims 6 and 11, Smith discloses that the rolls 11,12 are driven tension rolls while rolls 13,14 are retarded rolls, such that tension is provided on the tow between these pairs of rolls (col. 2, lines 35-52). Thus, rolls 11,12 are clearly driven at a greater speed than rolls 13,14. Also, see the embodiment of Fig. 2, which shows rolls 23,24,25,26 between sliding bodies 31,32,33. In col. 3, lines 51-54, Smith teaches that rolls 25,26 (the upstream rolls) are driven at a slower speed than rolls 23,24 (the downstream rolls).

9. Claims 7, 8, and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Neuert et al (5,214,828).

Neuert et al discloses an apparatus including a transporting roll group (4,6) for transporting tow and at least one sliding body (18,20,22) arranged between rolls of the transporting roll group for slidably contacting the tow to be transported. Regarding claim 8, see Fig. 4 which shows at least one sliding body (see, e.g., left-most element 24) on one side of the tow (i.e. on the left side) and at least one sliding body (see, e.g. right-most element 24) on the other side of the tow (i.e. on the right side). Regarding claim 9, Neuert discloses an adjusting means (10,12) for adjusting a tilt angle of the sliding body (see sliding body 22; Fig. 7) and a penetration amount of the sliding body 18 into the path of the tow (see Fig. 4, showing the adjustment in penetration amount of

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elements 24). Neuert shows a control means (14) for controlling adjustment of the sliding bodies.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Neuert et al (5,214,828) in view of Smith (2,790,208).

Neuert discloses a method including a step of transporting tow by means of a plurality of rolls (4,6) and applying a resistance on at least one side of the tow by slidably contacting at least one sliding body (18,20,22) onto the tow between the rolls. The tow is caused to "sift" or shift in a transporting direction to open the tow and to spread in a width direction as claimed. A plurality of sliding bodies are provided (18,20,22) as in claim 2, and each side of the tow is slidably contacted by at least one of the sliding bodies.

Neuert teaches that the method is carried out on uncrimped tow, however, rather than crimped tow. Neuert discloses that the method is performed on tow prior to entry of the tow into a stuffer box crimping machine. Neuert does teach, however, that the process "is usable not only prior to entry into a crimping machine but in general

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wherever optimal tow geometry is important.” (col. 2, lines 3-7). Smith teaches that it is desirable to open crimped tow in order “to increase the cross-sectional area of the tow and the uniformity of fiber distribution therein and to remove shiners, married fibers and concentrated bundles of filaments within the tow.” (col. 1, lines 15-20). One having routine skill in the art would recognize, through the teaching of Smith, that it would be beneficial to perform the opening method of Neuert on crimped tow in order to gain the advantages disclosed by Smith (col. 1, lines 15-20). It would have been obvious to one having ordinary skill in the art at the time the invention was made to perform the opening method of Neuert on crimped tow in order to increase the cross-sectional area of the tow and the uniformity of fiber distribution therein and to remove shiners, married fibers and concentrated bundles of filaments within the tow, as taught by Smith.

12. Claims 5, 6, 10, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stoller (3,438,104).

Regarding claims 5 and 10, Stoller discloses a method and apparatus as claimed, including upstream rolls 3,3 and downstream rolls 7,7. Stoller teaches that the rolls (3,7) “can be driven and regulated as desired to advance the yarn and control the tension of it” (col. 3, lines 5-8). One having routine skill in the art would recognize that it would be advantageous to drive the rolls at the same speeds when no additional tension is desired on the yarn so as to prevent breakage or damage to the yarn. It would have been obvious to one having ordinary skill in the art at the time the invention was made to drive the rolls (3,7) of Stoller at the same peripheral speed in order to

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prevent damage to or breakage of the yarn. Moreover, one having routine skill in the art would recognize that when the yarn is has too much slack therein and needs to be under greater tension, the speed of the downstream rolls 7,7 should be greater than that of rolls 3,3, as in claims 6 and 11. Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to drive the downstream rolls (7,7) at a speed greater than that of the upstream rolls (3,3) of Stoller in order to produce greater tension in the yarn for more optimal treatment of the yarn by the surface 4.

Allowable Subject Matter

13. Claims 3-4 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

14. The following is a statement of reasons for the indication of allowable subject matter: Claim 3 is allowable over the prior art of record since the prior art does not disclose a method of opening continuous filaments including steps of transporting crimped tow by a plurality of rolls and applying a resistance on each side of the crimped tow by slidingly contacting each side with at least one sliding body at a location between the rolls, wherein each sliding body is adjustable with respect to its tilt angle and penetration amount into the transporting path of the tow. Neuert discloses three sliding bodies which contact the tow (18,20,22) and are adjustable. Although one of the sliding bodies 22 is adjustable with respect to a tilt angle (see deflecting bar 28, Fig. 7) and

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another sliding body 18 is adjustable with respect to a penetration amount (see deflecting elements 24 in Fig. 4), *each* sliding body is not adjustable in both tilt angle *and* penetration amount, as recited in claim 3.

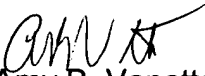
Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amy B. Vanatta whose telephone number is (703) 308-2939. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Calvert can be reached on (703) 305-1025. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3579 for regular communications and (703) 305-3579 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0861.


Amy B. Vanatta
Primary Examiner
Art Unit 3765

abv
September 12, 2003